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(54) **ELECTRONIC ELECTRICALLY DRIVEN TOOTH BRUSH AND TOOTH BRUSH DEVICE WITH THREAD-TOOTHPICK FUNCTION**

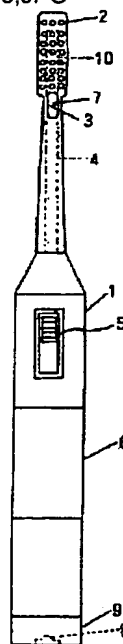
electrically driven tooth brush.

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(57) Abstract:

PURPOSE: To provide the functions and merits of an electronic toothbrush and an electrically driven toothbrush and add a threadtoothpick function and a dampproof and waterproof switch and provide a good contact between the toothbrush body and a battery charger.

CONSTITUTION: The minus electrode of an electrically driven toothbrush is provided in the toothbrush side 2, 3 and the plus electrode 6 is provided in the electrically driven toothbrush body 1 grasped by a hand and fine electric currents are conducted. In this way, impurities on the teeth are easily removed from the teeth. A planted brush with a thread-toothpick function is added thereto to remove impurities between the teeth. A magnet-sensitive switch is used as a waterproof and dampproof type by interposition of a shelter. The electrode in the grasped body is made so as to be easily fixed and provide a good electric contact by making use of magnetic force or the like of the battery charger in order to obtain a good electrical contact for charging between the battery charger and the electronic



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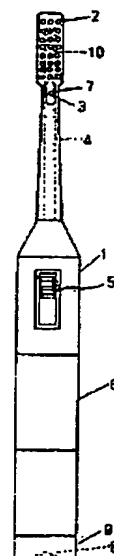
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(54) 【発明の名称】 電子電動歯ブラシと糸楊子機能歯ブラシ装置

(57) 【要約】 (修正有)

【目的】 電子歯ブラシと電動歯ブラシの機能と利点を合せもたせさらに糸楊子機能防湿防水スイッチを付加し、歯ブラシ本体と充電器の接触を良くした。

【構成】 電動歯ブラシ本体1に電子歯ブラシの電極を歯ブラシ側2、3にマイナス電極として、手に握る電動歯ブラシ本体1に電極6をプラス電極として設け、微電流を流すことにより、歯から歯垢を剥れやすくし、同様に糸楊子機能の植毛したブラシを付加し、歯の隙間から食物カス歯垢など取り除くようにした。防水・防湿スイッチは磁気感应スイッチを遮蔽物を介する事により防水・防湿スイッチとする。また充電器と電子電動歯ブラシとの充電接触をより良くする為、握り手電極に対して、充電器の磁力等を利用して固定しやすくし、接触を良くした。



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【特許請求の範囲】

【請求項 1】 電動歯ブラシの電池を用いて、歯ブラシ側をマイナスとし、手で握る側にプラスの電極を設け歯と当該歯ブラシの間に、微電流を流す事によって、歯知の通り、イオン結合によっても付着している歯垢を取り易くし、電動歯ブラシの振動によって歯の汚れを更に取り易くする。

【請求項 2】 糸楊子の機能を持たせるために振動を利用して、次の様にした。歯と歯の隙間に歯ブラシを入り易くするために、1 糸又は、複数糸にし、且つ歯ブラシのひとつ、ひとつの束を歯と歯の隙間の間隔を考慮し、歯ブラシの束と束との間の間隔を広くした、又、歯ブラシの束の束づけを細くして電動歯ブラシの振動で押し当てる事で自然に隙間に入りやすくした。

【請求項 3】 防湿、防水機能のため、磁場例えば磁石を利用して、磁場感应スイッチ例えばリードリレースイッチなどで接点を開閉し、又、磁場とスイッチの間に非磁性材料の遮蔽物を介在する事により防湿及び防水スイッチとする事ができる。

【請求項 4】 充電器側のスタンドに歯ブラシを立て、握り手側プラス電極に、磁性反応金属を用い、充電器側スタンド支え部分の電極部に磁石を配置し、固定しやすくする事ができ、合せて、電気的接触を良くする事ができる。又、充電器側底面、電子電動歯ブラシ下部に充電用電極を設け、重力を利用して、一点支持にする事により電気的接触を良くする事ができる。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 この発明は歯ブラシに関するものである。歯ブラシと歯の間に歯知の通りイオン結合によっても付着している歯垢に対して、逆電圧を印加し、微電流を流す事により、歯垢を取り除きやすくし、且つ電動歯ブラシの振動により、上記効果を更に増加した、即ち相乗効果を得たものである。又糸楊子機能歯ブラシについては歯の隙間の間隔を考慮した糖毛により、歯の隙間に入り易くし歯垢と食物カスを取り易くした、又防水、防湿スイッチは磁場感应スイッチを利用して、磁場を利用し遮蔽物を介在して磁場感应スイッチを開閉するものである。

【0002】

【従来の技術】 これまでの電子歯ブラシは、手で左右、上下に歯ブラシを動かして食物カスを取り、又微電流により、歯垢などを取り除いていた。又、電動歯ブラシは振動などにより、食物カス、歯垢などを取り除いていた。合せて、歯周病に双方とも効果があった。又糸楊子は、手で歯の隙間にひとつひとつにブラッシングし、食物カス歯垢などを取り除いていた。従来の防湿、防水スイッチは、ゴムカバー等で覆い、ゴムの柔らかい、機能を利用してスイッチカバーとして、その機能を果たしていた。その他ではスイッチカバーを大きくする事により、隙間抵

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抗を大きくして、防水、防湿機能を果たしてきた。又これまでの充電器の充電電極は充電器の下部に設け 2 点支持で、上部は転倒防止リングのみであった。

【0003】

【発明が解決しようとする課題】 電子歯ブラシの場合、手で上下、左右にブラシを動かす事により食物カス、歯垢、歯石等を取り、合せて、微電流により歯垢を取るため、充分な時間が、必要であり且つ疲れた。更に電動歯ブラシでは、振動により、充分な時間をかけ、ブラッシング効果により、食物カス、歯垢等を取り除こうとしていたが、歯垢などには効果不足であった。上記 2 種の歯ブラシを合せて、電子電動歯ブラシとする事で歯垢などには、歯知の通り、歯垢はもともマイナスに帯電しているものなので、ブラシの先をマイナスとして、逆電圧を印加し微電流を流す事により、歯と歯垢が反発して、はがれやすくなり、そこをマイナスに帯電しているブラシが引き寄せ、取り除きやすくし、電動歯ブラシの振動で、更に歯垢及び食物カスなど取り除く効果を大きくした。

【0004】 これまでの糸楊子は、糸、又は細いブラシで手に持ち、歯の隙間、ひとつひとつに糸楊子、又はブラシを歯と歯の隙間に入れ、食物カスなどを取り除いていた。しかし、歯の隙間と隙間の間隔を考慮してブラシを糖づけ、歯と歯の隙間に入りやすくし、食物カス歯垢などを振動と、逆電圧を印加し微電流を流す事により、イオン結合によっても付着している歯垢を取り易くし、且つ食物カスなど取り易くした。

【0005】 これまでの、防水、防湿スイッチはゴムの皮膜を介してスイッチの防水・防湿を得ていたが、ゴムを押しこんだりするため機械的強度と温度湿度などで劣化しやすかった。又、スイッチカバーを大きくし、隙間抵抗を大きくする事で、防水・防湿効果を得ていたものがあるが、本質的に防水・防湿機能に無理があった。そこで磁場例えば永久磁石と遮蔽物、例えば非磁性材料、合成樹脂などを介して磁場感应スイッチ例えばリードリレーを使用する事により完全な防水・防湿スイッチを提供できる。

【0006】 従来の電動歯ブラシの充電器では、下部にプラスとマイナスの電極を設け、上部は固定リング等で、ゆるやかに固定し転倒防止のみであったため下部電極において、2 点支持の為、傾いた時など接触不良が生じやすかった。そこで充電器転倒防止リング側又は、歯ブラシ側握り手側電極などに磁石を利用して、磁力により接触を良くし、下部電極を 1 点支持にする事により、重力を利用して接触の良い充電器を提供できる。

【0007】

【発明が解決しようとする課題】 歯にイオン結合によっても付着している歯垢に対して、歯ブラシ側をマイナスにし、握り手側にプラスの電極を設け、人体を通して、逆電圧を印加し、イオン結合による歯垢に対して微電流

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を流し、剥れやすくし、更に電動歯ブラシの強力なブラッシング効果も利用して、歯垢、食物カスなどを、取り除き易くしたものを提供できます。

【0008】糸鋸子機能の歯ブラシを作る事によって、上記微電流を流す事と、電動歯ブラシの振動によって、歯と歯の隙間の間隔を考慮した、歯ブラシを歯に押し当て、振動により、歯と歯の隙間にブラシを入り易くし、食物カスを取り除き、且つ、電子の流れにより、歯垢を剥がれやすくした状態で電動による振動で歯垢を強力に取り除きやすくしたものを提供できます。

【0009】磁場例えば永久磁石と、磁気感应スイッチ例えばリードリレーの間に非磁性の孔の無い遮蔽物を介在させる事によって完全な防水・防湿スイッチを提供できます。

【0010】これまでの電動歯ブラシの充電器では、電動歯ブラシ下部にプラスとマイナスの電極を設け、上部は固定リングで、ゆるやかに固定し、転倒防止のみであったため、2点支持の下部電極の接触が不安定であった。しかし上部を磁力で固定し電極として活用し、下部は重力を利用して1点支持で接触させるため、安定した接触の良い充電器を提供できます。

【0011】

【作用】上記のように構成された、電子電動歯ブラシは、鉋知の通り、手に握る側をプラスにして、歯側は人体を通してプラスに帯電させ、歯ブラシ側をマイナスにする事により歯と歯垢の間に逆電圧を印加して、イオン結合によっても付着している歯垢に対して、歯と歯垢に対して逆電圧を印加し微電流を流す事により剥れやすくし、鉋知の通り電動歯ブラシの振動により、相乗効果で、更に歯垢食物カスを取り除きます。

【0012】糸鋸子機能をもつ歯ブラシは、微電流によるイオン結合による斥力を利用した反発力と、振動を利用したこまかい動きで歯の幅を考慮した、歯ブラシの束の間隔で1条又は複数条にし且つ細い束にしてブラシが歯の隙間に入り易くし、合せて振動で食物カスを取り除き、電子歯ブラシの効果で歯垢を取り易くし双つを合せもつ効果の糸鋸子機能の歯ブラシを提供できる。

【0013】防水と防湿のため、磁場と、孔の明いてない遮蔽物を介してスイッチ例えばリードリレーを用いることにより、外側と内側を完全に遮蔽する事により、防水・防湿スイッチを提供できる。

【0014】当該歯ブラシの充電接触を完全にするため、又充電器に固定しやすくなるため、握り手電極を磁石に若やすい金属を用い、充電器側固定電極位置に磁石を用いある程度固定し接触を完全にし、又下部充電極は重力を利用して、一点支持にする事により接触を完全にした。

【0015】

【実施例】以下本発明の実施例を添付図面に基つて詳細に説明する。図1は電子電動歯ブラシを示す正面図で

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あり図2は平面図である。図3は歯ブラシ側の正面図であり図4は平面図であり歯ブラシ側の、3の電極及び4の歯ブラシ交換用挿入穴と7の指円型の穴を介して3の電極先端部と図5歯ブラシ断面図の10の穴を通して水を浸入させ、ブラシ植毛部根元を通して電流を流すようにした。

【0016】鉋知の通り、電子歯ブラシは図3及び図4の3の電極棒と7の指円型の穴より図5の歯ブラシ内側の10の穴を介して植毛した、1本1本の各々の隙間から水を介して、電圧を印加し微電流を流すものである。

【0017】上記の通り1本体の電動歯ブラシに設けた6プラス電極握り手部分と3マイナス電極棒と7の穴を介し10の穴を通して、2の植毛した歯ブラシ部をマイナスの電極とすることにより、電動歯ブラシに電子歯ブラシの機能を付加して、電子電動歯ブラシ装置とした。

【0018】図6及び図7は関連発明としての糸鋸子機能を有した歯ブラシの正面図及び平面図である。歯ブラシの植毛を、あらかじめ歯の正面及び裏面に、植毛したブラシが当たらない様にするため、歯の幅と歯の隙間の間隔を考慮して植毛したブラシを、11の様に1条又は複数条にして、且つ束を細くして、歯の隙間部分のみ入り易くした。

【0019】且つ振動により、押し当る事によりブラシの束の部分のみ隙間に入る様に植毛を工夫した、又電子電動歯ブラシの機能も付加した。

【0020】図8及び図9は関連発明としての防水・防湿スイッチの断面図及び正面図である。16の磁石と18の磁場感应スイッチ例えばリードリレースイッチを利用する事により、磁場と磁場感应スイッチに影響しにくい材料例えば合成樹脂を16の磁石と18の磁場感应スイッチとの間に14を介在させる事により、無孔でスイッチを開閉する事ができる。図8の断面図では磁石を左右に移動する17のガイドレールを設置し、16の磁石を遠ざけ又は近接させ、18の磁場感应スイッチ例えばリード・リレースイッチを開閉させるように示した図である。

【0021】図10及び図11は関連本発明としての充電器本体図であり図10は正面図であり、図11は上面図である。充電は21の磁石を利用して、該歯ブラシの図1の6の握り手電極に磁力により接触させ、合せて固定しやすくし、20の充電電極に接触を確実にし、又23下部充電極を1点支持とし、重力を利用する事により接触を確実にするようにしたものである。

【0022】

【発明の効果】本発明による、電子電動歯ブラシ（図1～7）は以上のように構成されたもので、電動歯ブラシに電子歯ブラシの機能を付加し、電圧を人体を通して印加し、歯に帯電して歯と歯垢にイオン結合によって付着している帯電している歯垢に対して、逆電圧を印加し微電流を流し歯垢を剥れやすくし、電動歯ブラシの振動に

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よっても、歯垢を取り易くし、合わせて食物カス等も取り除く。2つの効果を合せもつものである。

【0023】関連発明としての糸楊子機能の歯ブラシは上記の2つの効果と、歯の幅と隙間の間隔を考慮して、植毛して、歯の表面と裏面に植毛したブラシが当たらず、歯の隙間のみに入り易くし、歯の隙間の歯垢や食物カスを取り易くしたものである。

【0024】関連発明としての防水・防湿スイッチ（図8～9）は、磁場を利用して、磁場を伝えやすい材料例えば合成樹脂を介在せしめ、磁場感应スイッチを感知せしめ、磁場により、スイッチを開閉し、無孔による卒により防水及び防湿効果を完全なものとした。

【0025】関連発明としての充電器電極接触法（図10～11）は、該歯ブラシと充電器との接触をよりよくし、又該歯ブラシを充電器に安定して、固定し、又、下部は1点支持にし、重力を利用して、充電器との接触を完全にした。

【図面の簡単な説明】

【図1】本発明による電子電動歯ブラシ装置の実施例を示す正面図である。

【図2】上記電子電動歯ブラシ装置を示す平面図である。

【図3】本発明による電子電動歯ブラシ装置の歯ブラシ側部分を示す正面図である。

【図4】上記電子電動歯ブラシ装置の歯ブラシ側部分を示す平面図である。

【図5】電子電動歯ブラシ装置、歯ブラシの拡大断面図である。

【図6】糸楊子機能歯ブラシ装置の実施例を示す正面図である。

【図7】糸楊子機能歯ブラシ装置の実施例を示す平面図である。

*【図8】本発明の関連発明である防水・防湿スイッチ装置の実施例を示す拡大断面図である。

【図9】防水・防湿スイッチ装置の拡大正面図である。

【図10】関連発明である充電器装置の実施例を示す縮小正面図である。

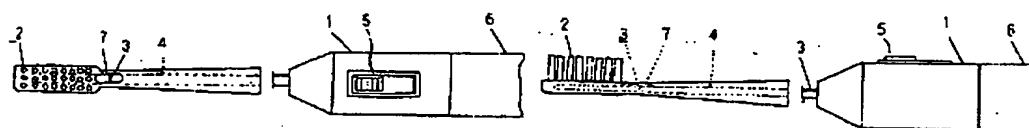
【図11】関連発明である充電器装置の縮小正面図である。

【符号の説明】

- | | |
|----|--------------------|
| 1 | 電子電動歯ブラシ本体 |
| 2 | 歯ブラシ束ファイナス電極 |
| 3 | 歯ブラシ交換用支持棒及びマイナス電極 |
| 4 | 歯ブラシ交換用差し込穴 |
| 5 | 防水・防湿スイッチ |
| 6 | 握り手側プラス電極 |
| 7 | 水浸入用穴 |
| 8 | 充電用マイナス電極 |
| 9 | 充電型電池交換蓋 |
| 10 | 歯ブラシ内水浸入穴 |
| 11 | 糸楊子機能歯ブラシ束及びマイナス電極 |
| 12 | 水浸入口 |
| 13 | 糸楊子機能歯ブラシ本体 |
| 14 | 防水・防湿スイッチ遮蔽板 |
| 15 | 磁石カバー |
| 16 | 磁石 |
| 17 | 磁石カバーガイドレール |
| 18 | リードリレー |
| 19 | 充電器本体 |
| 20 | 充電用プラス電極金属 |
| 21 | 磁石 |
| 22 | 電子電動歯ブラシ充電用支持棒 |
| 23 | 充電マイナス電極 |
| 24 | トランス及び整流回路収納部 |

【図3】

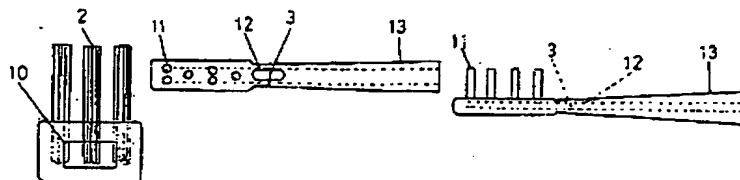
【図4】



【図5】

【図6】

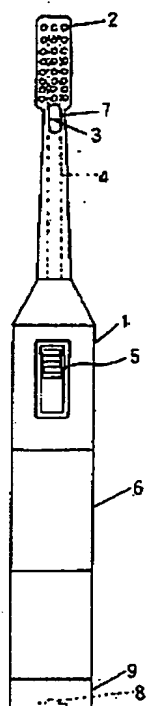
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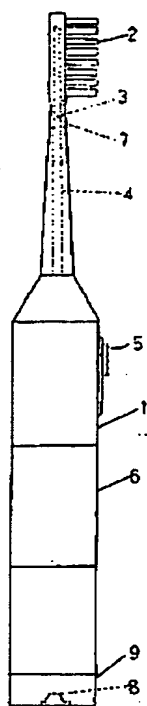
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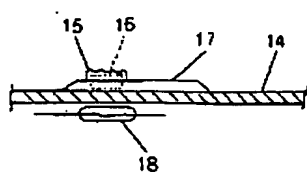
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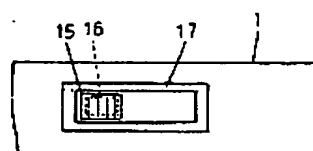
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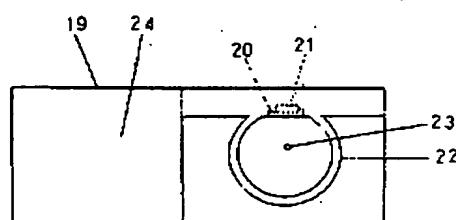
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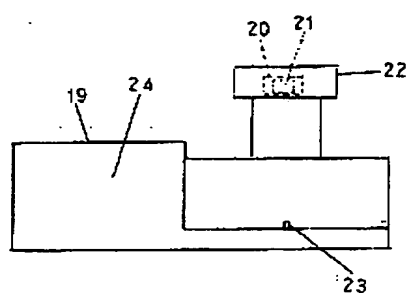
【図9】



【図11】



【図10】



【手続補正書】

【提出日】平成7年9月29日

【手続補正1】

【補正対象書類名】図面

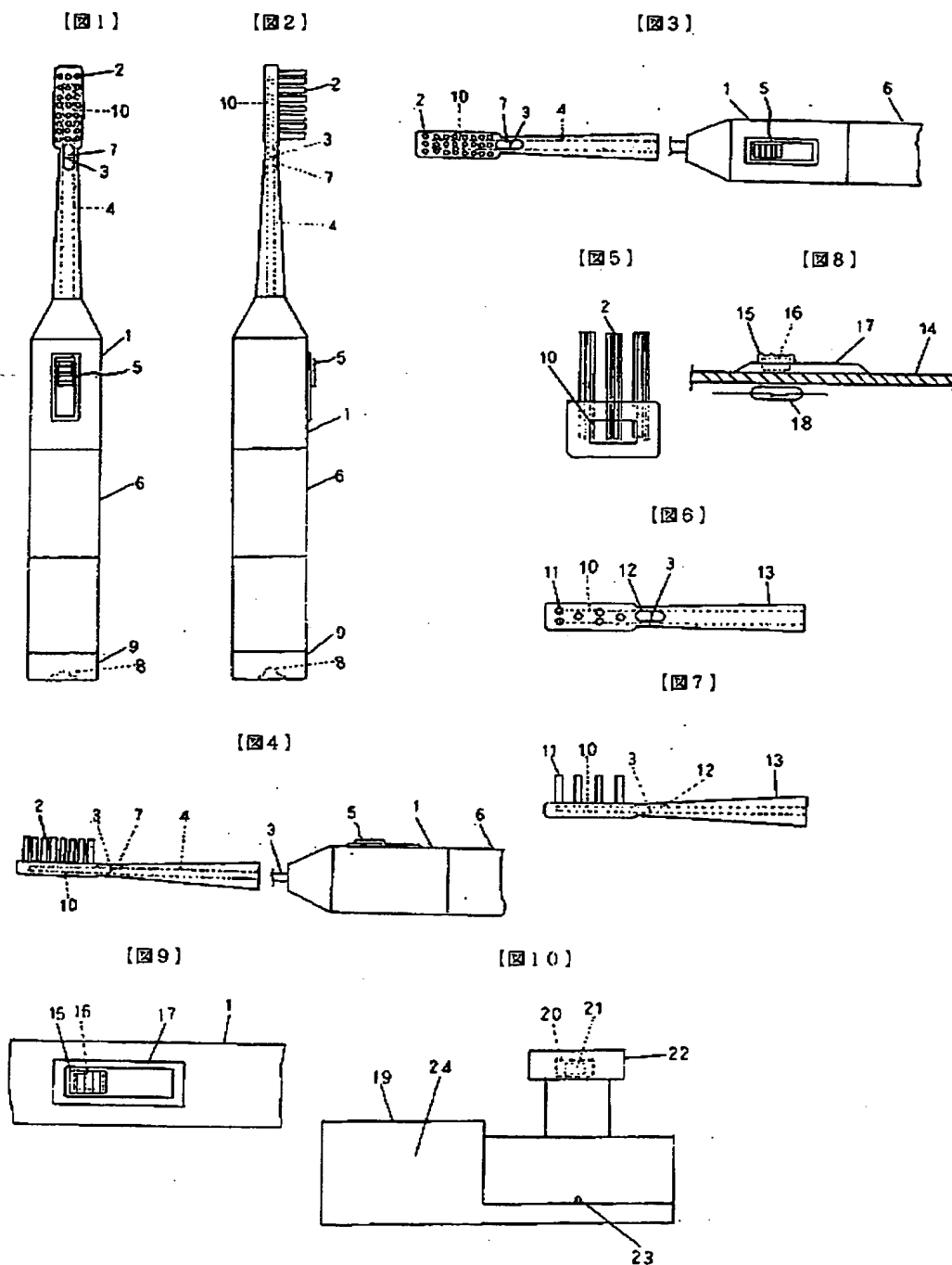
【補正対象項目名】全図

【補正方法】変更

【補正内容】

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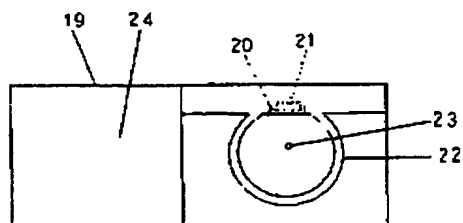
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【図11】



フロントページの続き

(51)Int.Cl.⁹
A61C 17/00

識別記号

庁内整理番号

F I

技術表示箇所

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CLAIMS

[Claim]

[Claim 1] Dental dirt is made to make to take the dental plaque which has adhered also according to ionic bond, and to take by vibration of an electric gear-tooth brush as ****, by considering a gear-tooth brush side as minus, preparing the electrode of a plus in the side grasped by hand using the cell of an electric gear-tooth brush, and passing a fine current between a gear tooth and the concerned gear-tooth brush.

[Claim 2] In order to give the function of *****, it was performed as follows using vibration. It made to go into an opening by making it one articles or two or more articles, and making ***** of the flux of a gear-tooth brush thin, and pressing one of the gear-tooth brushes, and one flux by vibration of an electric gear-tooth brush, moreover it made large the spacing between the flux of a gear-tooth brush in consideration of the spacing of the opening between a gear tooth and a gear tooth, in order to enter and ***** a gear-tooth brush in the opening between a gear tooth and a gear tooth.

[Claim 3] It can consider as moisture proof and a waterproofing switch by opening and closing a contact with a magnetic field induction switch, for example, a reed relay switch etc., and intervening the shelter of a non-magnetic material between a magnetic field and a switch using a magnetic field, for example, a magnet, because of moisture proof and a waterproofing function.

[Claim 4] A gear-tooth brush is stood to the stand by the side of a battery charger, a magnetic reaction metal is used for a grip hand side plus electrode, and a magnet is arranged to the polar zone of a battery-charger side stand **** fraction, and it can make to fix, it can double, and an electric contact can be improved. Moreover, the electrode for charge can be prepared in a battery-charger side base and the electronic electric gear-tooth brush lower part, and an electric contact can be improved by making it one point support using gravity.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed description]

[0001]

[Field of the Invention] This invention relates to a gear-tooth brush. By passing a fine current, reverse voltage is impressed between a gear-tooth brush and a gear tooth to the dental plaque which has adhered also according to ionic bond as ****, a dental plaque is made to remove, and by vibration of an electric gear-tooth brush, the above-mentioned effect was increased further, namely, the synergistic effect is acquired. It makes to go into the opening between dental, and moreover it made a dental plaque and pabulum dregs to take, using a magnetic field induction switch, waterproofing and a moisture-proof switch use a magnetic field, intervene a shelter, and a magnetic field induction switch is opened [by hair transplantation which took the spacing of the opening between dental into consideration about the ***** functional gear-tooth brush] and closed.

[0002]

[Prior art] The old electronic gear-tooth brush moved the gear-tooth brush to right and left and the upper and lower sides by hand, took pabulum dregs, and had removed the dental plaque etc. by the **** current. Moreover, the electric gear-tooth brush had removed pabulum dregs, the dental plaque, etc. by vibration etc. It doubled and both sides had an effect in gum disease. Bra ***** of the ***** was carried out by hand in the opening between dental at each of, and it had removed the pabulum dregs dental plaque etc. The conventional moisture proof and the waterproofing switch were covered with rubber covering etc., and had achieved the function as a switch cover using the function that rubber is soft. in addition -- coming out -- by enlarging a switch cover, opening resistance was enlarged moreover it came waterproofing and the moisture-proof function sure enough, the charge electrode of an old battery charger was prepared in the lower part of a battery charger, it was two point support, and the upper part was only a fall prevention ring

[0003]

[Object of the Invention] In order in the case of an electronic gear-tooth brush to take and double pabulum dregs, a dental plaque, a dental calculus, etc. and to take a dental plaque by the fine current by moving a brush to the upper and lower sides and right and left by hand, sufficient time was required, and although sufficient time tended to be spent by vibration and it was going to remove pabulum dregs, the dental plaque, etc. according to the bra ***** effect with the electric gear-tooth brush furthermore it was spotted, to the dental plaque, the effect was insufficient. By setting the two above-mentioned sorts of gear-tooth brushes, and considering as an electronic electric gear-tooth brush, to a dental plaque By considering the point of a brush as minus, impressing reverse voltage, and passing a fine current, since the dental plaque is charged in minus from the first as **** The gear tooth and the dental plaque opposed and it becomes easy to peel, and it was made for Blanc charged in minus to draw that near, and to remove, it is vibration of an electric gear-tooth brush, and the effect which removes a dental plaque, pabulum dregs, etc. further was enlarged.

[0004] It had old ***** in the hand with yarn or the thin brush, it put ***** or the brush into the opening between a gear tooth and a gear tooth at the opening between dental, and each of, and had removed pabulum dregs etc. However, pabulum dregs etc. were made to make to take the

dental plaque which has adhered also according to ionic bond by planting a brush in consideration of the spacing of the opening between dental, and an opening, making to go into the opening between a gear tooth and a gear tooth, impressing reverse voltage for a pabulum dregs dental plaque etc. with vibration, and passing a fine current, and to take.

[0005] Although old waterproofing and the moisture-proof switch had obtained waterproofing and moisture proof of a switch through leather ** of rubber, in order to push in rubber or to carry out, they tended to deteriorate at a mechanical strength, temperature humidity, etc. Moreover, although there were some which had acquired the waterproofing / moisture-proof effect by enlarging a switch cover and enlarging opening resistance, unreasonableness was essentially in waterproofing / moisture-proof function. Then, perfect waterproofing / moisture-proof switch can be offered by using a magnetic field induction switch, for example, a reed relay, through a magnetic field, for example, a permanent magnet and a shelter, for example, a non-magnetic material, synthetic resin, etc.

[0006] In the battery charger of the conventional electric gear-tooth brush, the electrode of a plus and minus was prepared in the lower part, the upper part is a fixed ring etc., it fixed gently, and since it was only fall prevention, when it inclines in a lower electrode for two point support, a poor contact tended to produce it. Then, the good battery charger of a contact can be offered using gravity by improving a contact by magnetism at a battery-charger fall prevention ring side or a gear-tooth brush side grip **** electrode using a magnet, and making a lower electrode one point support.

[0007]

[Object of the Invention] To the dental plaque which has adhered to the gear tooth also according to ionic bond, a gear-tooth brush side is made minus, the electrode of a plus is prepared in a grip hand side, it lets a human body pass, reverse voltage is impressed, a fine current is passed to the dental plaque by ionic bond, it makes to separate, the bra ***** effect with a still powerful electric gear-tooth brush is also used, and the thing which made a dental plaque, pabulum dregs, etc. to remove can be offered.

[0008] **** -- a cordless handset -- by making the gear-tooth brush of ability by passing the above-mentioned fine current and vibration of an electric gear-tooth brush The thing with consideration to the spacing of the opening between a gear tooth and a gear tooth which made the dental plaque to press a gear-tooth brush against a gear tooth, to make to go a brush into the opening between a gear tooth and a gear tooth, and to remove pabulum dregs by vibration, and to remove by electron flow by vibration which depends a dental plaque electric in the status that it made to separate can be offered.

[0009] Perfect waterproofing / moisture-proof switch can be offered by making the shelter without a nonmagnetic hole intervene between a magnetic field, for example, a permanent magnet, and a magneto-induction switch, for example, a reed relay.

[0010] In the battery charger of an old electric gear-tooth brush, the electrode of a plus and minus was prepared in the electric gear-tooth brush lower part, it is a fixed ring, it fixed gently, and since the upper part was only fall prevention, its contact of the lower electrode of two point support was unstable. However, the upper part is fixed magnetically and it utilizes as an electrode, and since the lower part is contacted by one point support using gravity, it can offer the good battery charger of the stable contact.

[0011]

[Operation] The electronic electric gear-tooth brush constituted as mentioned above Make a plus the side grasped in a hand as ****, a gear-tooth side electrifies a plus through a human body, and reverse voltage is impressed between a gear tooth and a dental plaque by making a gear-tooth brush side minus. It makes to separate by impressing reverse voltage to a gear tooth and a dental plaque, and passing a fine current to the dental plaque which has adhered also according to ionic bond, and as ****, by vibration of an electric gear-tooth brush, it is the synergistic effect and dental-plaque pabulum dregs are removed further.

[0012] **** -- a cordless handset -- the gear-tooth brush with ability with the repulsive force using the repulsive force by the ionic bond by the fine current Make it one articles or two or more

articles at intervals of the flux of the gear-tooth brush which took dental width of face into consideration by the top paddle motion using vibration, and it is made thin flux. **** of the effect that make to go into the opening between dental, and make a dental plaque to double, to remove pabulum dregs by vibration and to take by the effect of an electronic gear-tooth brush, and a brush doubles and has **** -- a cordless handset -- the gear-tooth brush of ability can be offered [0013] Waterproofing / moisture-proof switch can be offered by covering an outside and the inside completely by using a switch, for example, a reed relay, through a magnetic field and the shelter which a hole does not open because of waterproofing and moisture proof.

[0014] In order to make perfect a charge contact of the concerned gear-tooth brush, and in order to make to fix to a battery charger, using the metal which is easy to wear a grip hand electrode to a magnet, the magnet was used for the battery-charger side fixed electrode position, it fixed to some extent, and the contact was made perfect, and the lower charge pole made the contact perfect by making it one point support using gravity.

[0015]

[Example] The example of this invention is explained in detail below based on an accompanying drawing. Drawing 1 is the front view showing an electronic electric gear-tooth brush, and drawing 2 is a plan. Drawing 3 was the front view by the side of a gear-tooth brush, and drawing 4 is a plan, makes water permeate through the hole of 10 of the electrode trailer of 3, and the drawing 5 gear-tooth brush cross section through the electrode of three by the side of a gear-tooth brush, and the insertion hole for gear-tooth brush exchange of 4 and the hole of the elliptic type of 7, and passed the current through the brush hair transplantation section root.

[0016] As ****, an electronic gear-tooth brush impresses a voltage through water from every opening of each which transplanted hair through the hole of 10 inside [gear-tooth brush] drawing 5 from the hole of the electrode of 3 of drawing 3 and drawing 4, and the elliptic type of 7, and passes a fine current.

[0017] It let the hole of 10 pass through 6 plus electrode grip hand fraction and 3 minus electrode which were prepared in the electric gear-tooth brush of one mainframe as above-mentioned, and the hole of 7, and by considering as the electrode of minus of the gear-tooth brush section among which 2 transplanted hair, the function of an electronic gear-tooth brush was added to the electric gear-tooth brush, and it considered as electronic electric gear-tooth brush equipment.

[0018] drawing 6 and drawing 7 -- **** as related invention -- a cordless handset -- hair transplantation of the gear-tooth brush which is the front view and the plan of a gear-tooth brush with ability, since the brush which transplanted hair at a dental transverse plane and a dental rear face beforehand is made to hit Only the dental opening fraction made to make into one articles or two or more articles like 11 the brush which transplanted hair in consideration of dental width of face and the spacing of the opening between dental, and to make flux thin, and to enter.

[0019] And by pushing and hitting by vibration, the function of an electronic electric gear-tooth brush also devised and added hair transplantation so that only the fraction of the flux of a brush might go into an opening.

[0020] Drawing 8 and drawing 9 are the cross sections and front view of waterproofing / moisture-proof switch as related invention. By using the magnet of 16, and the magnetic field induction switch of 18, for example, a reed relay switch, when 14 makes it intervene between the magnet of 16, and the magnetic field induction switch of 18, the material, for example, the synthetic resin, which seldom influences a magnetic field and a magnetic field induction switch, it is nonporous, and a switch can be opened and closed. It is drawing shown that the guide rail of 17 which moves a magnet to right and left with the cross section of drawing 8 is installed, the magnet of 16 is kept away, or is made to approach, and it makes it open and close, the magnetic field induction switch, for example, the lead relay switch, of 18.

[0021] Drawing 10 and drawing 11 are the views of a battery-charger mainframe as a related this invention, drawing 10 is front view, and drawing 11 is a plan. It makes to make it contact by magnetism, to double and to fix to the grip hand electrode of 6 of drawing 1 of this gear-tooth brush using the magnet of 21, and charge ensures a contact at the charge electrode of 20, and considers a 23 lower charge pole as one point support, and is made to become certain about a

contact by using gravity.

[0022]

[Effect of the invention] The electronic electric gear-tooth brush (drawing 1 -7) by this invention is what was constituted as mentioned above. As opposed to the electrified dental plaque which adds the function of an electronic gear-tooth brush to an electric gear-tooth brush, impresses a voltage through a human body, is charged for a gear tooth, and has adhered to the gear tooth and the dental plaque according to ionic bond Reverse voltage is impressed and a fine current is passed, and it makes to separate a dental plaque, and also by vibration of an electric gear-tooth brush, a dental plaque is made to take, and it doubles and has two effects which double and remove pabulum dregs etc.

[0023] **** as related invention -- a cordless handset -- the dental dental plaque and dental pabulum dregs of an opening are made to make for the brush which the gear-tooth brush of ability transplanted hair in consideration of the two above-mentioned effects, dental width of face, and the spacing of an opening, and transplanted hair at a dental front face and a dental rear face not to hit, but to go only into the opening between dental, and to take

[0024] Waterproofing / moisture-proof switch (drawing 8 -9) as related invention makes it intervene using a magnetic field, the material, for example, the synthetic resin, which is easy to tell a magnetic field, made the magnetic field induction switch sense, opened and closed the switch and made waterproofing and the moisture-proof effect perfect by depending nonporous by the magnetic field.

[0025] By the battery-charger electrode contact process (drawing 10 -11) as related invention improving more the contact to this gear-tooth brush and a battery charger, and stabilizing for it and fixing a ***** brush to a battery charger, the lower part was made one point support and made the contact to a battery charger perfect using gravity.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[An easy explanation of a drawing]

[Drawing 1] It is the front view showing the example of the electronic electric gear-tooth brush equipment by this invention.

[Drawing 2] It is the plan showing the above-mentioned electronic electric gear-tooth brush equipment.

[Drawing 3] It is the front view showing a part for the gear-tooth brush flank of the electronic electric gear-tooth brush equipment by this invention.

[Drawing 4] It is the plan showing a part for the gear-tooth brush flank of the above-mentioned electronic electric gear-tooth brush equipment.

[Drawing 5] It is the expanded sectional view of electronic electric gear-tooth brush equipment and a gear-tooth brush.

[Drawing 6] **** -- a cordless handset -- it is the front view showing the example of **** brush equipment

[Drawing 7] **** -- a cordless handset -- it is the plan showing the example of **** brush equipment

[Drawing 8] It is the expanded sectional view showing the example of waterproofing / moisture-proof switching equipment which is related invention of this invention.

[Drawing 9] It is the expansion front view of waterproofing / moisture-proof switching equipment.

[Drawing 10] It is the reduction front view showing the example of the battery-charger equipment which is related invention.

[Drawing 11] It is the reduction front view of the battery-charger equipment which is related invention.

[An explanation of a sign]

- 1 Mainframe of Electronic Electric Gear-Tooth Brush
- 2 Gear-Tooth Brush Flux Minus Electrode
- 3 Bearing Bar for Gear-Tooth Brush Exchange, and Minus Electrode
- 4 ***** for Gear-Tooth Brush Exchange
- 5 Waterproofing / Moisture-Proof Switch
- 6 Grip Hand Side Plus Electrode
- 7 Hole for Water Influxs
- 8 Minus Electrode for Charge
- 9 Charged Type Changing-Battery Lid
- 10 Gear-Tooth Brush Inner-Drainage Permeation Hole
- 11 **** -- a cordless handset -- **** brush flux and a minus electrode
- 12 Water-Influx Opening
- 13 **** -- a cordless handset -- the mainframe of a **** brush
- 14 Waterproofing / Moisture-Proof Switch Shield
- 15 Magnet Covering
- 16 Magnet
- 17 Magnet Covering Guide Rail
- 18 Reed Relay

- 19 Mainframe of Battery Charger
- 20 Plus Electrode Metal for Charge
- 21 Magnet
- 22 Support Ring for Electronic Electric Gear-Tooth Brush Charge
- 23 Charge Minus Electrode
- 24 Transformer and Rectifier-Circuit Stowage

[Translation done.]

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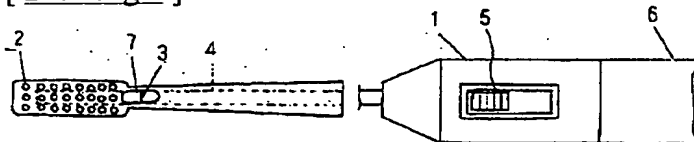
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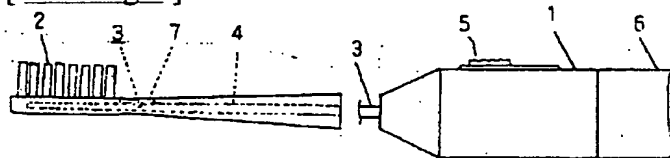
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 DRAWINGS

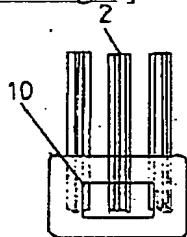
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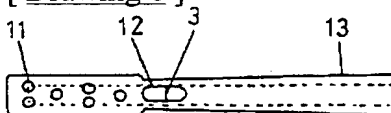
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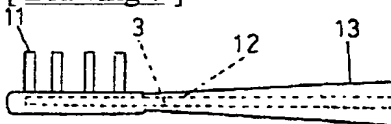
[Drawing 5]



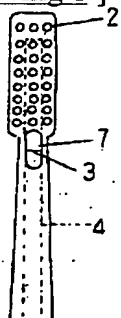
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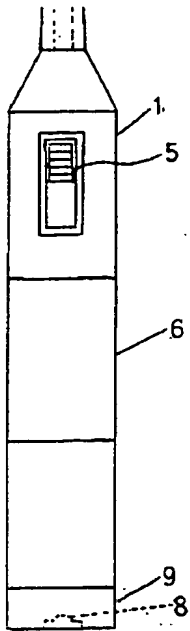


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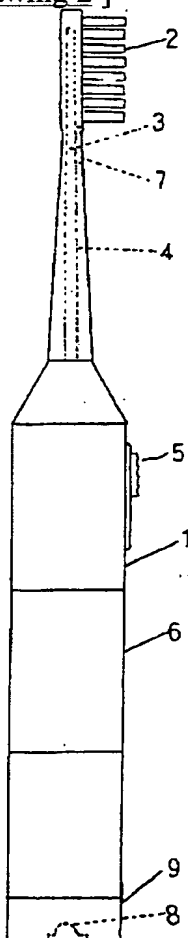


[Drawing 1]

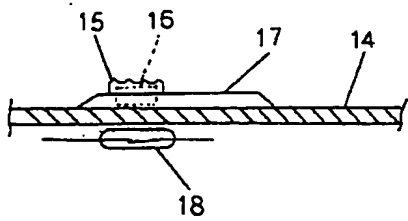




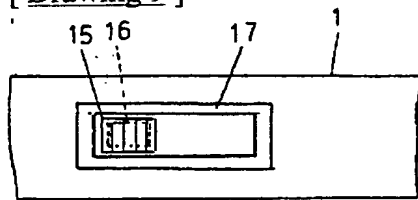
[Drawing 2]



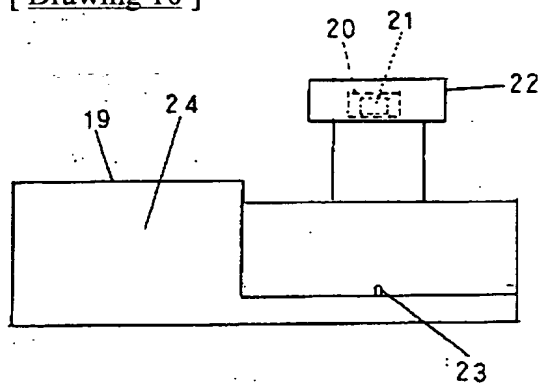
[Drawing 8]



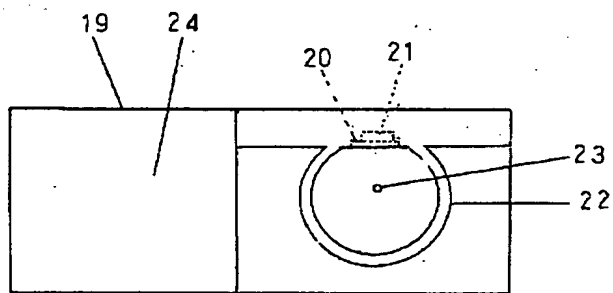
[Drawing 9]



[Drawing 10]



[Drawing 11]



[Translation done.]